



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/587,573 | 06/13/2007 | Wolfgang Friedl | 1024943-000212 | 9504 |

21839 7590 11/24/2009
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

| |
|----------|
| EXAMINER |
|----------|

CHARLES, MARCUS

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3656

| | |
|-------------------|---------------|
| NOTIFICATION DATE | DELIVERY MODE |
|-------------------|---------------|

11/24/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/587,573 | Applicant(s) FRIEDL ET AL. | |
| | Examiner Marcus Charles | Art Unit 3656 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>6-13-07, 7-31-06 & 12-26-07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is the first action relating to serial application number 10/587,573 filed 06-13-2007.

Claims 15-30 are currently pending.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to because the sectional line "A-B" in fig. 2 should be --I-I-- or --1-1--. It should be noted that the plane upon which a sectional view is taken should be indicated on the view from which the section is cut by a broken line. The ends of the broken line should be designated by Arabic or Roman numerals corresponding to the view number of the sectional view, and should have arrows to indicate the direction of sight.

In addition, the reference (3) is used to depict two different inner rings. It is not proper to use one reference character to depict two different objects. Also, reference character (11) is used to depict two different bearing cages. In order to be able to identify each particular inner ring and bearing cage, a different reference character must be allotted to each.

Furthermore, the drawing fails to show the outer ring is provided with lubrication openings as in claims 22 and 28.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

Art Unit: 3656

replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: in page 3, line 7, the "A-B" should be --I-I-- or --1-1--. See object to the drawing above.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3656

5. Claims 15-21, 23-27 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maret (6,769,809) in view of Koyama et al. (7,150,565). In claims 15-16, 25 and 29, Maret discloses a double-row bearing comprising a one piece bearing outer ring (4) and a split inner ring (6, 7), a plurality of rolling element comprising a first row of rolling elements, each rolling element having a first diameter and a second row of rolling elements, each having a second diameter different from the first; the contact angle and the pitch circle diameter of the first row of rolling elements are inherently different from that of the second row of rolling elements. Maret also discloses the rolling elements are balls but fails to disclose the balls are made from a ceramic material. Koyama et al. discloses a double row (12) rolling bearing having an outer ring (not labeled) and inner ring (not labeled) and most significantly having a plurality of double row ball rolling elements (not labeled) made from a ceramic material (col. 3, lines 67 to col. 4, lines 1-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the rolling element of Maret so that they are made from ceramic material in view of Koyama et al. in order to reduce wear due to friction under high speed applications and rust from atmospheric contaminants, and to reduce being affected such as thermal expansion due to operation under high temperature. In addition, Maret fails to disclose the cage is made from plastic such as PEEK. Koyama et al. discloses the bearing cage is made from a plastic material most significantly polyether-ether-ketone (PEEK), which has excellent wear resistance, heat resistance, lightweight, and excellent mechanical strength. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the cage of Maret

Art Unit: 3656

so that it is made of a plastic material most significantly polyether-ether-ketone (PEEK) in view of Koyama et al. in order to obtain excellent wear resistance, heat resistance, lightweight, and excellent mechanical strength.

In claim 16, Maret discloses the claimed invention above.

In claims 19-20, note the flange (12) in fig. 5.

In claim 21, Maret discloses in fig. 6, lubrication openings (not labeled) in the contact area of the front surfaces of the split bearing rings.

In claims 23-24, note the cages (18, 19) guided on one of the shoulders of one of the split bearing rings (6, 7).

In claim 26, note the bearing of Maret is an angular contact bearing.

In claim 27, the bearing of Maret and Koyama et al. is inherently a component of a transmission which in operation has a very high rpm and high temperature.

In claim 30, it is apparent that the bearing of Maret and Koyama et al. is capable of operating in a transmission of a race car due to the ability of the bearing to withstand high speed and high temperature.

Regarding claims 17-18, Maret fails to disclose the first rolling element contact angle ranged between 5° and 35° and the second rolling element contact angle ranged between 10° and 60° . It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the contact angles of the first and second rolling element to include the claimed ranges, since it has been held that where the general conditions of a claim is disclosed in the prior art, discovering the optimum ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Art Unit: 3656

6. Claims 22 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maret and Koyama et al. as applied to claim 15 above, and further in view of Riblet (2,019,464). Maret fails to disclose the outer ring has lubrication openings. Riblet discloses a double row bearing comprising an outer race (11) having a plurality of lubrication openings (23). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the outer race of Maret so that it includes a plurality of opening in view of Riblet in order to provide lubrication of the bearing from an external source.

Citation

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note the prior art cited in attached PTO Form 892.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ridley Richard can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3656

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marcus Charles

/Marcus Charles/

Primary Examiner, Art Unit 3656